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IS 7407-1 to 3 (1980): Jute Tarpaulin Fabric [TXD 3: Jute and Jute Products]



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“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

SPECIFICATION FOR
JUTE TARPAULIN FABRIC

(*First Revision*)

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BUREAU OF INDIAN STANDARDS

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG

NEW DELHI 110002

Indian Standard
SPECIFICATION FOR
JUTE TARPAULIN FABRIC
(*First Revision*)

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(*Continued on page 2*)

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Indian Standard
**SPECIFICATION FOR
JUTE TARPAULIN FABRIC**
(First Revision)

0. FOREWORD

0.1 This Indian Standard (Parts I to III) (First Revision) was adopted by the Indian Standards Institution on 5 February 1980, after the draft finalized by the Jute and Jute Products Sectional Committee had been approved by the Textile Division Council.

0.2 Tarpaulin fabric, double warp (commonly known as DW), which is produced by jute mills in sufficiently large quantities, has different constructions for different end uses, such as the constructions used for fabrication of bags for packing fertilizers, pesticides, mint coins, etc.

0.3 This standard was first published as IS : 7407-1974* covering only 407 g/m²; 85 × 39 (15 oz/45 in; 10 × 10) variety of jute tarpaulin fabric, with the specific mention of its use for manufacture of fertilizer bags. In view of that fact that this variety can be used for other purposes as well and that certain other varieties, suitable for different purposes, also need to be covered in the standard, the Sectional Committee decided to extend the scope of the standard in the present revision. Further, for the sake of convenience in accommodating different varieties of the tarpaulin in the standard, the Committee decided to issue this revision in parts.

0.4 In this revision, while Part I gives general requirements for the fabric, common to all varieties, the specific requirements for 407 g/m²; 85 × 39 (15 oz/45 in; 10 × 10) variety, given in the original version, are covered in Part II. Construction 380 g/m²; 68 × 39 (14 oz/45 in; 8 × 10), consequent upon the studies at IJIRA having shown that this variety also is suitable for the manufacture of laminated jute bags [see IS : 7406 (Part II)-1980†], has been added as Part III.

Jute tarpaulin fabric of other constructions would be covered in subsequent parts of the standard.

*Specification for jute fabric for fertilizer bag.

†Specification for jute bags for packing fertilizers: Part II Laminated bags manufactured from 380 g/m²; 68 × 39 tarpaulin fabric.

IS : 7407 (Parts I to III) - 1980

0.5 To familiarize the industry with International System (SI) units, the basic SI units as well as the recommended SI units for use in the textile industry are given at the end of the standard.

0.5.1 The Standards of Weights & Measures Act, 1976 also stipulates use of SI units.

0.6 For the purpose of deciding whether a particular requirement of these standards is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in the standard.

*Rules for rounding off numerical values (*revised*).

Indian Standard
**SPECIFICATION FOR
JUTE TARPAULIN FABRIC**
PART I GENERAL REQUIREMENTS
(First Revision)

1. SCOPE

1.1 This standard (Part I) covers general requirements regarding construction, freedom from defects, length, medium cuts and short pieces, width, contract moisture regain, corrected net mass, sampling, testing and inspection, criteria for conformity, and packing and marking for jute tarpaulin fabric.

1.1.1 The specific requirements of different varieties of the fabric are covered in subsequent parts of the standard.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definitions shall apply.

2.1 Lot — The quantity of fabric purporting to be of one definite type, width and quality, delivered to one buyer against one despatch note.

2.2 Full Cut — A length of continuously woven jute fabric measuring 82 m (or 90 yd) or more.

2.3 Medium Cut — A length of continuously woven jute fabric measuring 37 m (or 40 yd) or more but less than 82 m (or 90 yd).

2.4 Short Piece — A length of continuously woven jute fabric measuring 18 m (or 20 yd) or more but less than 37 m (or 40 yd).

2.5 Bale — A rectangular or square pressed, rigid package containing jute fabric, covered with bale covering with outer layer stitched and bound by metal hoops in conformity with IS : 2873-1969*.

2.6 Roll — A cylindrical rigid package containing jute fabric wrapped on a suitable core, covered with roll covering with outer layer stitched properly in conformity with IS : 4744-1968†.

*Specification for packaging of jute products in bales (*first revision*).

†Specification for packaging of jute products in rolls.

2.7 Contract Mass — The mass obtained from the marked length per bale or roll, nominal width and mass per square metre of jute fabric.

2.8 Contract Moisture Regain — The percentage regain on the basis of which the corrected net mass is calculated.

2.9 Corrected Net Mass — The mass obtained by adjusting the actual net mass on the basis of actual regain to the contract regain.

3. CONSTRUCTION

3.1 The tarpaulin fabric shall be woven with jute yarn in double warp and single weft in plain weave and shall be calendered once. Its selvages shall be firm and reasonably straight and may contain cotton yarn.

4. FREEDOM FROM DEFECTS

4.1 The fabric shall be generally free from major weaving defects such as holes, cut and tears. It should also be reasonably free from bias.

NOTE — The fabric intended for use in making laminated bags and coverings should be as far as possible free from caddies sticking in lump form and loose threads.

5. LENGTH

5.1 The length of the fabric in a cut/bale/roll shall be as declared or marked [see 12.1.2(a)].

6. MEDIUM CUTS AND SHORT PIECES

6.1 Loose Cuts — The permissible number of medium cuts and short pieces in a lot of loose cuts shall be as agreed to between the buyer and the seller.

6.2 Bales — Unless otherwise agreed to between the buyer and the seller, the permissible number of medium cuts and short pieces per bale shall be as follows:

3 medium cuts, *Max*

or

2 medium cuts and 1 short piece, *Max*

7. WIDTH

7.1 The nominal width of the fabric shall be as specified in the contract or order.

7.1.1 A tolerance of \pm_0^+3 cm for nominal widths up to and including 100 cm and \pm_0^+1 percent for nominal widths over 100 cm shall be applicable [see 12.1.1(c)].

8. CONTRACT MOISTURE REGAIN

8.1 The contract moisture regain shall be 16 percent.

9. CORRECTED NET MASS

9.1 The corrected net mass of each cut/bale/roll shall be not less than the contract mass [*see* 12.1.2(b)].

10. SAMPLING

10.1 Unless otherwise agreed to between the buyer and the seller, the procedure for sampling a lot of cuts/bales/rolls shall be as given in Appendix A.

11. TESTING AND INSPECTION

11.1 The procedure for testing and inspection of the tarpaulin fabric shall be as given in Appendix B.

12. CRITERIA FOR CONFORMITY

12.1 The lot shall be considered as conforming to the requirements of the standard if the conditions specified in 12.1.1 or 12.1.2, as applicable, are satisfied.

12.1.1 *For Fabric Delivered in Loose Cuts/Bales:*

- a) The length of the fabric in each loose cut/bale under test (*see* A-2.3) is not less than the declared or marked length.
- b) The number of medium cuts and short pieces in each lot of loose cuts/each bale under test (*see* A-2.3) does not exceed the number specified or agreed to between the buyer and the seller.
- c) 90 percent of the width measurement values of the test sample (*see* A-2.3) are in accordance with the requirements specified in 7 and the remaining 10 percent fall within ± 0.5 percent tolerance on the nominal value.
- d) The average moisture regain percent of the test sample (*see* A-2.3) does not exceed the value specified.
- e) The total of the corrected net mass of the loose cuts/bales under test (*see* A-2.3) is not less than the contract mass.
- f) The average values of:
 - 1) mass per square metre,
 - 2) ends per decimetre, and
 - 3) picks per decimetre.
 for the test sample (*see* A-2.3) are in accordance with the requirements specified.

- g) The average warpway and weftway breaking load values of the test sample (*see A-2.3*) by ravelled strip method are not less than the corresponding values specified.
- h) The average oil content percent of the test sample (*see A-2.3*) does not exceed the value specified.

12.1.2 For Fabric Delivered in Rolls:

- a) The length of the fabric in each roll in the test sample (*see A-2.3*) does not vary from the declared or marked length by more than ± 1 percent.

NOTE — The tolerance on length is allowed in order to provide for measurement error.

- b) The total of the corrected net mass of the rolls under test (*see A-2.3*) does not vary from the contract mass by more than $\pm \frac{8}{2}$ percent.
- c) In respect of width; moisture regain; mass per square metre, ends and picks; breaking load; and oil content, 12.1.1(c), (d), (f), (g) and (h) are respectively satisfied.

13. PACKING AND MARKING

13.1 Packing — The jute fabric shall be delivered in loose cuts in lapped form, or in lapped cuts packed in bale form, or in roll form as agreed to between the buyer and the seller.

NOTE — For packing jute fabric in bales and rolls, IS : 2873-1969* and IS : 4744-1968† may be referred respectively. For local delivery, a cut in lapped form may be supplied after tying with twine at two places near selvages.

13.2 Marking — Unless otherwise agreed to between the buyer and the seller, the cuts/bales/rolls shall be marked with the following information:

- a) Name of the manufacturing mill;
- b) Description of goods;
- c) Length (m), in each cut/bale/roll;
- d) Contract mass (kg);
- e) Lot number, on each cut/bale/roll; and
- f) Any other particulars required by the buyer or by the law or regulation in force.

*Specification for packaging of jute products in bales (*first revision*).

†Specification for packaging of jute products in rolls.

13.2.1 The tarpaulin fabric may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

A P P E N D I X A

(Clause 10.1)

SAMPLING

A-1. GROSS MASS

A-1.1 For Loose Cuts — For evaluating the gross mass of loose cuts, the cuts selected as in **A-2.1** shall constitute the test sample.

A-1.2 For Bales — For evaluating the gross mass of bales, a minimum of 10 percent of the bales, selected at random from the lot, shall constitute the test sample.

A-1.3 For Rolls — For evaluating the gross mass of rolls, 10 percent of the rolls subject to a minimum of 2 rolls, selected at random from the lot, shall constitute the test sample.

A-2. REQUIREMENTS OTHER THAN GROSS MASS

A-2.1 For Loose Cuts/Bales — For assessing conformity to the requirements other than gross mass, the number of loose cuts/bales to be selected at random from the lot shall be as follows:

<i>No. of Loose Cuts/Bales in the Lot</i>	<i>No. of Loose Cuts/Bales to be Selected</i>
Up to 10	1
11 „ 20	2
21 „ 100	3
101 „ 150	4
151 „ 200	5
201 „ 250	6
251 „ 300	7
301 „ 350	8
351 „ 400	9
401 „ 500	10

A-2.2 For Rolls — For assessing conformity to the requirements other than gross mass, the number of rolls to be selected at random from the lot shall be as follows:

<i>No. of Rolls in the Lot</i>	<i>No. of Rolls to be Selected</i>
1 to 20	1
21 to 50	2
51 to 100	3
101 to 200	4
201 and above	4 + 1 for every 100 rolls or part thereof above 200 rolls

A-2.3 Test Sample — The test sample for different characteristics shall be as follows:

Sl No.	Test	Test Sample		
		Loose Cuts	Bales	Rolls
i)	Tare mass (baling hoops or cores and all packing materials)	All cuts selec- ted as in A-2.1	All bales selec- ted as in A-2.1	All rolls selected as in A-2.2
ii)	Length of fabric per cut/bale/roll			
iii)	Number of medium cuts and short pieces per lot of loose cuts/ per bale	Full lot	All bales selec- ted as in A-2.1	—
iv)	Width	All cuts selected as in A-2.1	5 cuts from each bale selected as in A-2.1	All rolls selected as in A-2.2
v)	Moisture regain, percent			
vi)	Mass (g/m ²)			
vii)	Ends and picks			
viii)	Breaking load	1 m from each cut/bale/roll subject to a minimum of three 1-m pieces		
ix)	Oil content, percent			

APPENDIX B

(Clause 11.1)

TESTING AND INSPECTION

B-1. LENGTH

B-1.1 For Cuts — Determine the length of the fabric in each cut in the test sample (*see A-2.3*) correct to a decimetre in accordance with 5.1, 5.2 or 5.3 of IS : 1954-1969* or any other suitable method.

B-1.2 For Bales — Determine the total length of fabric in each bale in the test sample (*see A-2.3*) by adding up the lengths of cuts taken as in B-1.1.

B-1.3 For Rolls — Determine the length of fabric in each roll in the test sample (*see A-2.3*) correct to a metre in accordance with 5.1, 5.2 or 5.3 of IS : 1954-1969*.

B-2. NUMBER OF MEDIUM CUTS AND SHORT PIECES

B-2.1 From the results of B-1, determine the number of medium cuts and short pieces in each lot of loose cuts/cach bale in the test sample (*see A-2.3*).

B-3. WIDTH

B-3.1 For Loose Cuts/Bales — Determine the width of cuts in the test sample (*see A-2.3*) correct to 0.5 cm in accordance with 6 of IS : 1954-1969*.

B-3.2 For Rolls — Determine the width of fabric in rolls in the test sample (*see A-2.3*) correct to 0.5 cm in accordance with 6 of IS : 1954-1969* subject to measuring at least 5 places for each roll at intervals of approximately one-fifth of roll length leaving about 10 m from the ends.

B-4. MOISTURE REGAIN PERCENT

B-4.1 For Loose Cuts/Bales — Determine the moisture regain percent in each cut in the test sample (*see A-2.3*) by the use of a suitable moisture meter. Take at least 4 readings for each cut.

*Methods for determination of length and width of fabrics (*first revision*).

B-4.2 For Rolls — Determine the moisture regain percent in each roll in the test sample (*see A-2.3*) on opening the roll by the use of a suitable moisture meter. Take at least 10 readings for each roll.

NOTE — A moisture meter working on the principle of measuring the electrical resistance which changes with moisture content in the material may be used for the purpose. The specimen (jute product) should be placed under the electrode gun having two poles of specially designed spring-loaded electrodes. The small amount of current passing through the electrodes is amplified and recorded on the meter calibrated against the actual moisture regain based on oven-dry method of the material. A separate chart, calibrating the actual moisture regain based on oven-dry method, of the material may also be used. The instrument shall be operated according to the manufacturer's instructions.

B-5. CORRECTED NET MASS

B-5.1 For Loose Cuts

B-5.1.1 The total net mass under test (M_n) is the sum total of the mass of all the cuts selected for inspection as in **A-2.1**.

B-5.1.2 Determine the total corrected net mass under test (M) by the following formula:

$$M = \frac{M_n \times (100 + \text{contract regain percent})}{100 + \text{average moisture regain percent}}$$

B-5.2 For Bales or Rolls

B-5.2.1 Determine the total gross mass of the bales or rolls in the test sample (*see A-1.2* or *A-1.3*) from the gross mass of each bale or roll taken to the nearest kilogram (M_g).

B-5.2.2 Remove all packing materials including baling hoops or cores (*see A-2.3*), weigh them together up to the nearest kilogram, determine the average tare mass and multiply by the number of bales or rolls weighed (*see B-5.2.1*) (M_t).

B-5.2.3 Determine the total net mass under test (M_n) by the following formula:

$$M_n = M_g - M_t$$

B-5.2.4 Determine the total corrected net mass under test (M) by the following formula:

$$M = \frac{M_n \times (100 + \text{contract regain percent})}{100 + \text{average moisture regain percent}}$$

B-6. MASS IN GRAMS PER SQUARE METRE

B-6.1 For Loose Cuts/Bales — Weigh the cuts in the test sample (*see A-2.3*) up to the nearest 0.1 kg after measurement of moisture regain

percent (*see B-4*) and determine their mass in grams per square metre of fabric at contract regain percent for each cut separately from the corresponding moisture regain percent (*see B-4*), measured length (*see B-1*) and nominal width of cuts.

B-6.2 For Rolls — Weigh the rolls in the test sample (*see A-2.3*) up to the nearest kilogram after measurement of moisture regain percent (*see B-4*) and determine their mass in grams per square metre of fabric at contract regain percent for each roll separately from the corresponding moisture regain percent (*see B-4*), measured length (*see B-1*) and nominal width of fabric.

B-7. ENDS AND PICKS

B-7.1 For Loose Cuts/Bales — Count the ends and picks in each cut in the test sample (*see A-2.3*) at 4 and 10 places respectively.

B-7.2 For Rolls — Count the ends and picks in each roll in the test sample (*see A-2.3*) once for ends and twice for picks at intervals of approximately one-fifth of the roll length.

B-7.3 Determine the ends and picks per decimetre in accordance with 5 of IS : 1963-1969*.

B-8. BREAKING LOAD

B-8.1 From each of the test pieces (*see A-2.3*), prepare 10 test specimens (5 each in the warp and the weft directions) and determine the breaking load by strip method as under:

Carry out tests on 10 cm (or 4 in) wide ravelled strips, with 20 cm (or 8 in) between grips, according to 11 of IS : 1969-1968† on a cloth strength tester with a rate of traverse 460 mm (or 18 in)/min.

NOTE — The tests may be carried out in the prevailing atmospheric conditions with relative humidity between 40 and 90 percent.

B-9. OIL CONTENT PERCENT

B-9.1 From each of the test pieces (*see A-2.3*), take representative strips weighing together approximately 20 g and determine the oil content percent on dry deoiled material basis by Soxhlet extraction using trichloroethylene as solvent, calculating as follows:

$$\text{Oil content percent on dry deoiled material basis} = \frac{M_o}{M_d} \times 100$$

where

M_o = mass, in grams, of the extracted material (including natural fat and wax and batching oil); and

M_d = oven-dry mass, in grams, of the fabric after extraction.

*Methods for determination of threads per decimetre in woven fabrics (*first revision*).

†Method for determination of breaking load and elongation at break of woven textile fabrics (*first revision*).

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Indian Standard

SPECIFICATION FOR JUTE TARPAULIN FABRIC

PART II 407 g/m²; 85 × 39

(First Revision)

1. SCOPE

1.1 This standard (Part II) covers specific requirements of 407 g/m²; 85 × 39 jute tarpaulin fabric.

2. SPECIFIC REQUIREMENTS

2.1 The tarpaulin fabric shall conform to the requirements of Table 1.

TABLE 1 REQUIREMENTS OF TARPAULIN FABRIC

Sl. No.	CHARACTERISTIC	REQUIREMENT	TESTING AND INSPECTION, REF TO CL No. OF PART I
(1)	(2)	(3)	(4)
i)	Mass, g/m ²	407 + 33 — 8	B-6
ii)	Ends/dm	85 ± 2 } 39 ± 2 }	B-7
iii)	Picks/dm		
iv)	Breaking load (ravelled strip method; 10 × 20 cm), kgf*, Min:		B-8
	Warpway	185	
	Weftway	100	
v)	Moisture regain percent, Max	17	B-4
vi)	Oil content percent on dry deoiled material basis, Max	6	B-9

*1 kgf = 9.8 N approx.

3. OTHER REQUIREMENTS

3.1 In respect of the requirements not specified here, Part I of the standard shall apply.

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Indian Standard

SPECIFICATION FOR JUTE TARPAULIN FABRIC

PART III 380 g/m²; 68 × 39

(First Revision)

1. SCOPE

1.1 This standard (Part III) covers specific requirements of 380 g/m²; 68 × 39 jute tarpaulin fabric.

2. SPECIFIC REQUIREMENTS

2.1 The tarpaulin fabric shall conform to the requirements of Table 1.

TABLE 1 REQUIREMENTS OF TARPAULIN FABRIC

Sl. No.	CHARACTERISTIC	REQUIREMENT	TESTING AND INSPECTION, REF TO CL No. OF PART I
(1)	(2)	(3)	(4)
i)	Mass, g/m ²	380 + 30 — 8	B-6
ii)	Ends/dm	68 ± 2	B-7
iii)	Picks/dm	39 ± 2	
iv)	Breaking load (ravelled strip method; 10 × 20 cm), kgf*, Min:		B-8
	Warpway	165	
	Weftway	110	
v)	Moisture regain percent, Max	17	B-4
vi)	Oil content percent on dry deoiled material basis, Max	6	B-9

*1 kgf = 9.8 N approx.

3. OTHER REQUIREMENTS

3.1 In respect of the requirements not specified here, Part I of the standard shall apply.

SI UNITS

INTERNATIONAL SYSTEM UNITS

Base Units

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	DEFINITION
Force	newton	N	1 N = 1 kg.m/s ²
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m ²
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m ²

RECOMMENDED SI UNITS FOR TEXTILES

Sl No.	CHARACTERISTIC	SI UNIT		APPLICATION
		Unit	Abbreviation	
(1)	(2)	(3)	(4)	(5)
1)	Length	Millimetre	mm	Fibres
		Millimetre, centimetre	mm, cm	Samples, test specimens (as appropriate)
		Metre	m	Yarns, ropes, cordages, fabrics
2)	Width	Millimetre	mm	Narrow fabrics
		Centimetre	cm	Other fabrics
		Millimetre, centimetre	mm, cm	Samples, test specimens (as appropriate)
		Centimetre, metre	cm, m	Carpets, druggets, <i>DURRIES</i> (as appropriate)
3)	Thickness	Micrometre (micron)	μ m	Delicate fabrics
		Millimetre	mm	Other fabrics, carpets, felts
4)	Linear density	Tex	tex	Yarns
		Millitex	mtex	Fibres
		Decitex	dtex	Filaments, filament yarns
		Kilotex	ktex	Slivers, ropes, cordages
5)	Diameter	Micrometre (micron)	μ m	Fibres
		Millimetre	mm	Yarns, ropes, cordages
6)	Circumference	Millimetre	mm	Ropes, cordages
7)	Threads in fabric:			Woven fabrics (as appropriate)
a)	Lengthwise	Number per centimetre	ends/cm	
		Number per decimetre	ends/dm	
b)	Widthwise	Number per centimetre	picks/cm	
		Number per decimetre	picks/dm	
8)	Warp threads in loom	Number per centimetre	ends/cm	Reeds
9)	Stitches in the knitted fabric:			Knitted fabrics (as appropriate)
a)	Lengthwise	Courses per centimetre	courses/cm	
		Courses per decimetre	courses/dm	
b)	Widthwise	Wales per centimetre	wales/cm	
		Wales per decimetre	wales/dm	

(Continued)

RECOMMENDED SI UNITS FOR TEXTILES — *Contd*

Sl No.	CHARACTERISTIC	SI UNIT		APPLICATION
		Unit	Abbreviation	
(1)	(2)	(3)	(4)	(5)
10)	Stitch length	Millimetre	mm	Knitted fabrics Made-up items
11)	Mass per unit area	Grams per square metre	g/m ²	Fabrics
12)	Mass per unit length	Grams per metre	g/m	Fabrics
13)	Twist	Turns per centimetre	turns/cm	Yarns, ropes (as appropriate)
		Turns per metre	turns/m	
14)	Test or gauge length	Millimetre, centimetre	mm, cm	Fibres, yarns and fabric specimens (as appropriate)
15)	Breaking load	Millinewton	mN	Fibres, delicate yarns (individual or skeins)
		Newton	N	Strong yarns (individual or skeins), ropes, cordages, fabrics
16)	Breaking length	Kilometre	km	Yarns
17)	Tenacity	Millinewton per tex	mN/tex	Fibres, yarns (individual or skeins)
18)	Twist factor or twist multiplier	Turns per centimetre \times square root of tex	turns/cm $\times \sqrt{\text{tex}}$	Yarns (as appropriate)
		Turns per metre \times square root of tex	turns/m $\times \sqrt{\text{tex}}$	
19)	Bursting strength	Newton per square centimetre	N/cm ²	Fabrics
20)	Tear strength	Millinewton Newton	mN N	Fabrics (as appropriate)
21)	Pile height	Millimetre	mm	
22)	Pile density	Mass of pile yarn in grams per square metre per millimetre pile height	g/m ² /mm pile height	Pile carpets
23)	Elastic modulus	Millinewton per tex per unit deformation	mN/tex/ unit deformation	Fibres, yarns, strands

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones: 323 0131, 323 3375, 323 9402

Fax : 91 11 3234062, 91 11 3239399, 91 11 3239382

Telegrams : Manaksanstha
(Common to all Offices)

Central Laboratory:

Plot No. 20/9, Site IV, Sahibabad Industrial Area, SAHIBABAD 201010

Telephone
8-77 00 32

Regional Offices:

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002	323 76 17
*Eastern : 1/14 CIT Scheme VII M, V.I.P. Road, Maniktola, CALCUTTA 700054	337 86 62
Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160022	60 38 43
Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600113	235 23 15
†Western : Manakalaya, E9 Behind Marol Telephone Exchange, Andheri (East), MUMBAI 400093	832 92 95

Branch Offices:

'Pushpak', Nurmohamed Shaikh Marg, Khanpur, AHMEDABAD 380001	550 13 48
‡Peenya Industrial Area, 1st Stage, Bangalore - Tumkur Road, BANGALORE 560058	839 49 55
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NIT Building, Second Floor, Gokulpat Market, NAGPUR 440010	52 51 71
Institution of Engineers (India) Building, 1332 Shivaji Nagar, PUNE 411005	32 36 35

*Sales Office is at 5 Chowringhee Approach, P. O. Princep Street,
CALCUTTA 700072

27 10 85

†Sales Office is at Novelty Chambers, Grant Road, MUMBAI 400007

309 65 28

‡Sales Office is at 'F' Block, Unity Building, Narashimaraja Square,
BANGALORE 560002

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AMENDMENT NO. 1 MAY 1986

TO

IS:7407(Parts 1 to 3)-1980 SPECIFICATION FOR
JUTE TARPAULIN FABRIC

(First Revision)

(Page 3, clause 0.2) - Substitute the following
for the existing clause:

'0.2 Double warp jute tarpaulin cloth mean plain
weave cloth made wholly of jute with double warp and
single weft, interwoven, weighing not more than 610 g
per square metre (18 ounces per square yard) having the
number of warp threads not more than 118 per dm
(30 per inch) and weft threads not more than 55 per dm
(14 per inch).'

(TDC 3)

**AMENDMENT NO. 2 MAY 2002
TO
IS 7407 (PART 3) :1980 SPECIFICATION FOR
JUTE TARPAULIN FABRIC**

PART 3 380 g/m²; 68 × 39

(First Revision)

[Page 17 Table 1, Sl No. (vi), col 3] — Substitute '3' for '6'.

(TX 03)

AMENDMENT NO. 3 NOVEMBER 2005
TO
IS 7407 (PARTS 1 TO 3) : 1980 SPECIFICATION FOR
JUTE TARPAULIN FABRIC

(First Revision)

[*Page 15, Table 1, Sl No. (vi), col 3*] — Substitute '3' for '6'.

(TX 03)

Reprography Unit, BIS, New Delhi, India